

OPTICAL MULTILAYER STRUCTURE AND ITS PRODUCTION METHOD, OPTICAL SWITCHING DEVICE, AND IMAGE DISPLAY

MEHRSCICHTIGE OPTISCHE STRUKTUR UND HERSTELLUNGSVERFAHREN DAFÜR, OPTISCHE SCHALTEINRICHTUNG UND BILDANZEIGE

STRUCTURE OPTIQUE MULTICOUCHE ET PROCEDE DE PRODUCTION ASSOCIE, DISPOSITIF DE COMMUTATION OPTIQUE ET AFFICHAGE D'IMAGES

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[origin: US2004027701A1] Provided is an optical multilayer structure having a simpler configuration, flexibility in selection of materials and improved reliability in wiring and capable of high-speed response even in a visible light range. A optical multilayer structure (1) comprises a first layer (11) being light-absorptive and making contact with a substrate (10), a gap portion (12) having as large a size as light interference phenomenon can occur and being capable of varying the size, and a second layer (13) being transparent in this order on the substrate (10). Where a complex refractive index of the first layer (11) is N₁ (=n₁-ik₁, n₁ is a refractive index, k₁ is an extinction coefficient, and i is an imaginary unit), a refractive index of the second layer (13) is n₂, and a refractive index of an incident medium is 1.0, the optical multilayer structure (1) is configured so as to satisfy the following formula.

$$\frac{N_1^2 - \cos^2 \theta}{\sin^2 \theta} = \frac{n_2^2 - \cos^2 \theta}{\sin^2 \theta}$$

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